

ABSTRACT

Temperature compensation methods for physical property sensors are disclosed herein, based on a simple bridge circuit. An imbalance of the bridge circuit can be driven to a zero value, while a supply voltage thereof is simultaneously driven to a level required to bring the heating element to the temperature rise above ambient temperature that optimally compensates for a number of temperature-dependent effects. The heating element can be configured as a thin-film heating material. The resulting total temperature dependence of the measuring system, which includes the heating element, the bridge-circuit with amplifier and the fluid to be measured, can be reduced to a level at which the need for additional digital temperature compensation circuitry and its associated costs may be reduced.